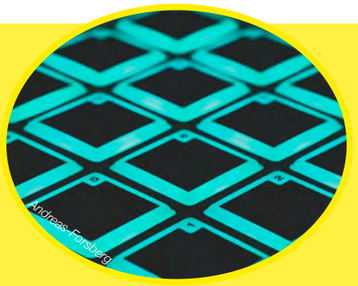
Deep TECH

In Catalonia, almost half of startups are deep tech organisations, meaning they are based on scientific discoveries or engineering innovations and aim to improve the world around us. They do so by using artificial intelligence (AI), big data, machine learning, blockchain, biotechnology, and other tools.



DRIVING INNOVATION

The Catalan research system is mature and competitive on an international scale. Nonetheless, judging by Catalonia's innovation index (moderate, according to the 2021 *European Innovation Scoreboard*), not enough is being done to fulfil the research system's knowledge transfer potential. For this reason, the Government of Catalonia's General Directorate for Knowledge Transfer is working to boost innovation through four core strategies: (1) connecting the industrial fabric to the knowledge system and reorienting knowledge transfer towards the needs of society; (2) incentivising transfer as well as promoting academic research; (3) providing business specialists to lead the business side of projects; and (4) obtaining private investment in the world of research in order to mature technologies.

Xavier Aldeguer, the Director General for Knowledge Transfer, indicates that, in this context, some kind of investment fund that could boost investments was needed, so that emerging cutting-edge technology projects coming out of the university system and research centres could make the leap to industry: "To this end, the first initiative we have launched is the creation of FITA, a public-private fund for driving research and scientific entrepreneurship in Catalonia".

FITA

The Fund for Investment into Advanced Technology (FITA by its Catalan initials) will provide €60 million until 2026, investing it in the initial stages of startups research projects. Its goal is to mobilise private capital in investment into technological development and to contribute towards improving the innovation index in Catalonia. Since its creation was approved, in late 2021, it has become a driving force for attracting investment, two new investment funds have been set up in the Catalan capital, and the European Investment Fund (the European Commission's financial instrument) has indicated that it will participate in FITA. This is the first time the EIF has been part of a fund at regional rather than state level. FITA should be in operation in the first quarter of 2023.

AIGECKO

www.aigecko.com
Artificial intelligence in computer vision and deep learning for the food sector. An API (Application Programming Interface) called LogMeal (**logmeal.es**) offers the most advanced food AI service in the world for food recognition, monitoring and tracking. Just a click will lead you to dish recognition, nutritional information, food types, food groups and ingredients.

DERMAVISION SOLUTIONS

dermavisions.com
This Catalan startup has created Deviskan, a medical device that can diagnose melanoma in just five minutes. It gathers images using AI and the most advanced vision system and processes them through a deep learning algorithm and ABCDE rules to evaluate malignancy. This non-invasive method processes the images and automatically generates a report to facilitate the diagnosis process for the dermatologist.

LINKING REALITIES

unionavatars.com
Want to create an avatar that looks 100% real? All you need is a selfie. This Barcelona-based startup will help you to create your own virtual identity through avatars, so that you can use a realistic representation of yourself in video games, on social media, in virtual reality worlds and in gamification, thus breaking down dimensional barriers.

IKERA RD8

ikerard8.tech
The start-up, IKERA RD8, whose head office is located in Barcelona, recovers 99.8% of the water, solid waste and volatile organic compounds (VOCs) from organic and inorganic products and waste, slurry, sludge and different types of water. After eight years of development in the pre-industrial phase, in 2020 they took the leap to an industrial scale, founding the company as a venture capital initiative to market the technology globally, offering both the sale, management and maintenance of the plants. "We are working with around forty multinationals, opening the door to a variety of circular economy and sustainability opportunities. We convert 99.8% of water on the one hand, and the solid part, free from water, on the other. In many cases, this can then be reused in the form of byproducts", explains Manuel Tomás, co-founder and director of development at Ikera RD8. The practice involves, for example, extracting water from orange peel at a low temperature, making it possible to reuse the solid part as a solid ingredient in the form of powder with the smell or taste of orange, which is of value in the food and drink industry.

NATURAL MACHINES

www.naturalmachines.com
This company has created Foodini, a 3D printer that prints food in unique shapes. It was created exclusively to work with food and uses empty stainless steel food capsules, which are then filled with fresh ingredients. In its first 10 years of existence, the company has received around forty awards and other accolades.